

CLAIMS

What is claimed is:

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1. An OFDM signal frame sync signal generator,
5 comprising:
a bandpass filter adapted to remove a significant portion of a
signal corresponding to at least one digital channel from a received OFDM
signal; and
10 an OFDM frame synchronizing correlator adapted to
generate a frame sync signal based on a detected correlation of a
cyclically extended portion of a data frame in said received OFDM signal
after processing by said bandpass filter.

2. The OFDM signal frame sync signal generator according
15 to claim 1, wherein:
said significant portion of said at least one digital channel is
a portion in a frequency domain farthest from a center frequency of an
analog channel contained in said received OFDM signal.

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3. The OFDM signal frame sync signal generator according
20 to claim 1, wherein:
said bandpass filter is adapted to significantly remove a
significant portion of each of two digital channels from said received
OFDM signal.

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4. The OFDM signal frame sync signal generator according
to claim 3, wherein:
said significant portion of said two digital channels are
respective portions in a frequency domain farthest from a center
30 frequency of an analog channel contained in said received OFDM signal.

5. The OFDM signal frame sync signal generator according to claim 1, wherein:

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said bandpass filter is a digital bandpass filter.

6. The OFDM signal frame sync signal generator according to claim 1, wherein:

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said OFDM frame synchronizing correlator generates said frame sync signal based on an integrated detection of respectively correlated cyclically extended portions of a plurality of data frames.

7. A method of detecting a timing of a data frame in a received OFDM signal, comprising:

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filtering out a significant portion of a signal corresponding to at least one digital channel from said received OFDM signal to provide a bandpass filtered OFDM signal;

correlating a cyclically extended portion of a data frame in said bandpass filtered OFDM signal; and

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generating a frame sync signal based on a correlation of said cyclically extended portion of said data frame.

8. The method of detecting a timing of a data frame in a received OFDM signal according to claim 7, wherein said filtering comprises:

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digitally filtering.

9. The method of detecting a timing of a data frame in a received OFDM signal according to claim 7, wherein:

 said correlating correlates respective cyclically extended portions of a plurality of data frames in said bandpass filtered OFDM
5 signal.

10. Apparatus for detecting a timing of a data frame in a received OFDM signal, comprising:

 means for filtering out a significant portion of a signal
10 corresponding to at least one digital channel from said received OFDM signal to provide a bandpass filtered OFDM signal;
 means for correlating a cyclically extended portion of a data frame in said bandpass filtered OFDM signal; and
 means for generating a frame sync signal based on a
15 correlation of said cyclically extended portion of said data frame.

11. The apparatus for detecting a timing of a data frame in a received OFDM signal according to claim 10, wherein said means for filtering comprises:

20 means for digitally filtering said received OFDM signal.

12. The apparatus for detecting a timing of a data frame in a received OFDM signal according to claim 10, wherein:

 said means for correlating correlates respective cyclically
25 extended portions of a plurality of data frames in said bandpass filtered
 OFDM signal.